

ABSTRACT

A nucleotide detector 10 includes: metal particles 12 having a size of the order of nanometers (diameter: about 6 nm) placed on a surface of a substrate 11 at high density with high precision (with spaces of about 12 nm between adjacent particles); and single-stranded DNAs (thiol DNAs) 13 having sulfur atoms at ends bonded to the gold particles 12. The thiol DNAs 13 are placed uniformly over the entire substrate 11 at high density with high precision. Therefore, once a fluorescence-labeled single-stranded DNA is hybridized with any of the thiol DNAs 13, high fluorescence intensity is stably obtained. This detector is therefore usable as a high-performance DNA sensor with a high SN ratio.